no case did the operation permanently aggravate the diabetes.

Of ten operated cases of diabetes collected by Sternberg [9] four suffered from the disease in severe form; several of the operations were of major character, yet death resulted in none, and in more than half complete recovery followed.

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OTITIC MEDIA IN CHILDREN, A NEW PRACTICAL POINT IN DIAGNOSIS. BACTERIAL INVESTIGATIONS.*

This paper is based upon the study and analysis of 30 cases of otitis media treated in the Pediatric Clinic of the University of California and in my private practice.

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Certain observations which study of a number of cases of otitis media in infants and children have impressed upon me as important are generally neglected; others are not described in the literature on this subject.

The first of these relates to the diagnosis of acute middle ear affections of whatever nature. A typical case will afford material for illustration:

Emily G., 5 months old, has cried intermittently and has been in pain for 24 hours. She does not sleep, refuses food, is fretful, flushed and feverish. Examination of the chest and abdomen discloses nothing to cause these symptoms. Pulse 140; rectal temperature 103 degrees; defecation and micturition normal. There is redness of the fauces. Directing attention particularly to the ear, because in obscure cases in childhood—cases without a definite chain of symptoms—it is well always to consider the possibility of otitis media, pressure made by placing the finger behind the angle of the jaw in the groove formed by the left inferior maxillary bone and the anterior border of the sterno-cleido-mastoid and pressing upward and inward toward the auditory canal, elicited decided evidence of pain. On the other hand, manipulation of the external ear in the manner commonly employed, e. g., by pulling the helix forward and backward, by drawing the lobe downward, and by pressing upon the tragus, failed to produce evidence of increased pain. Otoscopic examination showed the membrana tympani faintly reddened, retaining its reflection and not bulging. These signs of inflammation were so slight that a practiced specialist who examined the infant the following day considered it proper to exclude otitis media as the cause of the indisposition. After two days more of suffering the ear-drum perforated spontaneously and the infant made an uneventful recovery.

This phenomenon of tenderness discovered in the manner I have described I have been unable to find in the literature on this subject. Pollitzer refers in a cursory manner to tenderness along the course of the eustachian tube, and this manipulation no doubt affects the eustachian tube, but that is the nearest approach I have found in reference to this symptom. This symptom is constant in otitis media and is of especial diagnostic value in infants. Like other individual symptoms, it alone does not suffice for a positive diagnosis; but that does not affect the fact of its existence, when we see, as in the case cited, that even the disclosures of an otoscopic examination not infrequently fail to give an adequate idea of the pathologic conditions present in otic affections in children. To be sure, when the membrana tympani bulges, it is ordinarily safe to assume the presence of fluid in the middle ear; but absence of bulging or lack of pronounced myringitis by no means excludes it.

This leads to the second point I want to discuss —a matter bearing on the differential diagnosis of otitis media before perforation of the membrana tympani and in some degree concerning prognosis and treatment. Here the bacteriological findings may prove of value. As illustrating three classes of cases I cite the following three examples:

E. B., a 3-year-old girl, previously healthy. Referred to me April 3, 1904, by Dr. Levison. For several days she had been ill; fever a prominent symptom. The temperature fluctuated irregularly; it was 105 degrees (rectal) on the morning of April 3rd. There was present a mild pharyngitis and bronchitis, with some gastro-intestinal disturbance. Pain was evoked when the manipulation described above was practiced on the left side. Otoscopic examination showed a slightly reddened membrana tympani, no bulging and no loss of reflex. The child has a large pharyngeal adenoid. A grain of calomel was given, followed by a dessertspoonful of castor oil. The diet was regulated and treatment for the pulmonary affection instituted. Evening temperature 101 degrees. April 4, temperature, 9 a. m., 102.4 degrees; 4 p. m., 104.2 degrees. The urine contained a trace of albumen; no casts; diazo reaction negative.

An aurist found the membrana tympani very slightly injected; did not consider the ear responsible for the symptoms. He recommended the application of hot poultices over the concha. Under this treatment, together with treatment for the bronchial affection, the severity of the symptoms gradually diminished, and by the end of a week the child had apparently recovered. She did not, however, "pick up" rapidly after this illness, and on May 15th (six weeks after the first symptoms) I was again called to see her. The preceding night the ear had commenced discharging thick, creamy pus. The following day I called Dr. Pischel in consultation, as I had noted slight tenderness behind the ear. May 17th this part became oedematous, and May 18th a mastoid operation was performed with the disclosure of a single marble-sized accumulation of pus. Recovery was uncomplicated, but the child, though given every attention, did not thrive, and September 29th adenec-

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tomy was performed. From this time on improvement was rapid and marked until December, when she again sickened with definite symptoms pointing this time to the involvement of the right ear. Otoscopic examination showed a faint redness of the ear drum. Dr. Pischel, who was again called, practiced mild inflation with temporary benefit. The trouble persisted, however, and on the fifth day paracentesis of the membrana tympani was performed. There was an escape of gas, but no fluid escaped. All symptoms of illness promptly disappeared and the child has remained well since that time. Cultures in this case, obtained from the pharynx and from the aural discharge, showed influenza bacilli.

Louis C., 7-year-old boy. I was called in consultation by the attending aurist. Both ears were affected. The otoscope showed the membrane fiery red. Under treatment by instillations and copious irrigations the inflammation was materially reduced in the right ear and in the left ear recovery seemed complete. After paracentesis of the right ear drum it healed and the boy was discharged as cured. The left ear, however, ached more or less intermittently and its hearing was impaired until four months later, at which time a paracentesis was performed with satisfactory results. Cultures obtained from the pharynx at the time I saw the child contained streptococci.

Robert G., 2-year-old boy. Has follicular tonsilitis. After three days pain in left ear: Examination (manipulation described above) elicits evidence of tenderness. Membrana tympani faintly injected. This case was treated by instillations into the auditory canal and the treatment of the tonsilitis was continued. Recovery was complete within a week. Cultures from the throat showed staphylococci.

While not invariably true it seems to be the rule that the above noted bacterial agents, when present in pharyngitis, cause aural affections varying in frequency and degree with the nature of the germ. Thus, in young children, pharyngitis caused by the influenza bacillus is very likely to be complicated by aural affections. Furthermore, should the ear become involved, the affection is likely to be severe and obstinate. In these cases a slight myringitis may veil a serious condition, and I have found no other treatment so efficacious as early incision of the membrana tympani. In other words, the presence of influenza bacilli in the pharyngeal secretions of a child with aural symptoms inclines to the *diagnosis* of otitis media at least, and from a *prognostic* point of view signifies a rather serious condition for the successful *treatment* of which puncture of the ear drum will prove most satisfactory, and may be indispensable.

Streptococci also cause severe otitis, but as a rule the cases are less obstinate and more amenable to treatment, though paracentesis in these cases also seems to give uniformly the best results. Streptococci cause, usually, an acute suppurative otitis media. Streptococcic pharyngitis, accompanied by swelling of the pharyngeal structures, often refers pain to the ears without actual involvement of the tympani being present.

Staphylococci in cases of pharyngitis are, as a rule, comparatively benign. Even when the tympanum is affected there may be not infrequently only a serous exudate. This yields in many cases to non-operative treatment.

These three varieties of germs cause the majority of cases of otitis media in this vicinity, and their recognition in individual cases may afford valuable assistance in prognosis and treatment irrespective of associated conditions such as adenoids. Otitis media associated with the infectious diseases may or may not fall into these classes.

NEW AND NON-OFFICIAL REMEDIES.

(Continued from August.)

GUAJASANOL.

Guajasanol, C_6H_4 (OCH_3) $(CH_2N(C_2H_5)_2.COO)$. $HCl = C_{13}H_{19}NO_3HCl$, the hydrochloride of diethylglycocollguaiacol.

Actions and Uses.—It is antiseptic and anesthetic. It is readily absorbed and splits off guaiacol in the organism with marked facility. Its antiseptic power is said to be about equivalent to that of boric acid. Guajasanol has been recommended for the treatment of tuberculosis, both internally and subcutaneously. It is also recommended as a deodorant and is said to have given good service in putrid cystitis. Dosage.—1 to 3 Gm. (15 to 45 grains) in wafers; subcutaneously, 3 to 4 Gm. (45 to 60 grains) in 20 per cent. aqueous solution; locally it may be used in from 0.1 to 2 per cent. solutions. Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York).

HEDONAL.

Hedonal, $CH_3CH_2CH_2CH(CH_3)O.CO.NH_2 = C_6H_{13}O_2N$, a urethane differing from ethyl carbamate, U. S. P., in that the ethyl radicle has been replaced by the radicle of methylpropylcarbinol (pentan-2-ol). $CH_3.CH_2.CH_2.CHOH.CH_3$.

Actions and Uses.—Hedonal appears to have a greater hypnotic effect than ethyl carbamate. It is said to be followed by no after-effects and is oxidized in the body to urea and carbon dioxide. It is recommended in insomnia due to mental overwork or nervous excitement occurring in the course of neurasthenia or hysteria. It is claimed to be particularly useful preliminary to anesthesia, a hypnotic dose being given and anesthesia effected with chloroform after the patient has been asleep for an hour. Dosage.—1 to 2 Gm. (15 to 30 grains), administered dry followed by a swallow of water, or in wafers or capsules. Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York.)

HELMITOL.

A name applied to Hexamethylenamine Methylencitrate (which see). Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York.)

HEMICRANIN.

A mixture of 5 parts of acetphenetidin (phenacetin), 1 part caffeine and 1 part citric or tartaric acid.

Dosage.—0.5 to 1.0 Gm. (8 to 15 grains). Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York).

HEMOGALLOL.

An organic iron compound produced from blood by reduction of its hemoglobin by means of pyrogallol.

Actions and Uses.—It is hematinic. Hemogallol